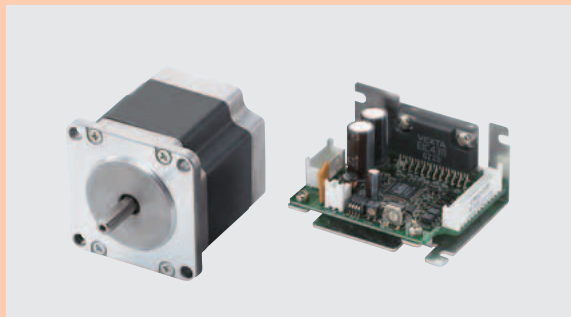


1.8°/0.9°/Geared Stepper Motor and Driver Package CMK Series

For details on this product please refer to our website.
www.orientalmotor.com/catalog



● For detailed information about regulations and standards, please see the Oriental Motor website.



View Expanded Product Information, Specifications, CAD, Accessories & more online. Visit www.orientalmotor.com/catalog or use the QR code and select "CMK Series".

The **CMK** Series is a motor and driver package consisting of a 1.8°/0.9° Stepper Motor and a compact 24 VDC input microstep driver.

- Microstepping Driver
- Low Vibration
- Compact Driver Size

Features

Compact and Lightweight Microstep Driver

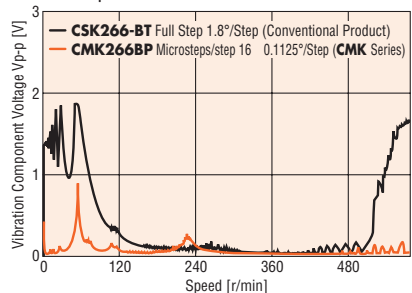
● Achieving Low Vibration and Noise in a Microstep Drive

The newly designed DC board-level microstepping driver is compact and lightweight. The 1.8° stepper motor's basic step angle (1.8°/step) is divided by a maximum of 16 resolutions (0.1125°/step) without the use of a reduction mechanism or other mechanical elements, which contributes to the reduction in noise and vibration of the equipment.

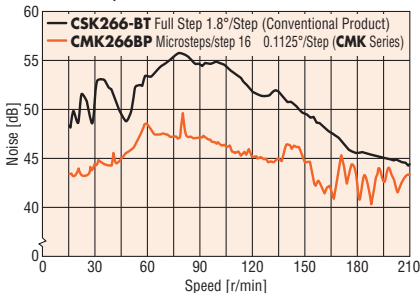
Microsteps/Step	Resolution	Step Angle
1	200	1.8°
2	400	0.9°
4	800	0.45°
8	1600	0.225°
16	3200	0.1125°

(At basic step angle of 1.8°/step)

Comparison of Vibration Characteristics



Comparison of Noise Characteristics

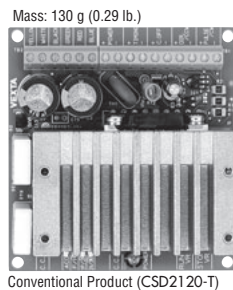


● Full Range of Driver Functions

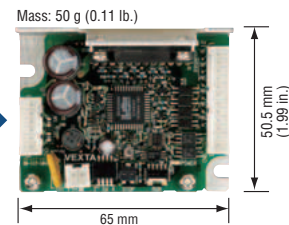
- Five preset step angles
- Operating current can easily be set with a digital switch
- 1-pulse/2-pulse input mode switching
- Power LED
- Connector with lock (by MOLEX)

● One of the Smallest Microstep Drivers in the Industry

The **CMK** Series driver is one of the smallest, lightest microstep drivers in the industry. The driver is 62% lighter and has 41% less install area (based on horizontal installation) compared to our conventional product. This product contributes to downsizing of the equipment.



Conventional Product (CSD2120-T)

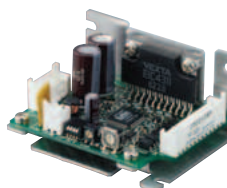


New Product (CMD2100P)

Comparison with a conventional driver

- ◇ Mass: **62%** less
- ◇ Install area: **41%** less (based on horizontal installation)
- ◇ Volume: **41%** less [the conventional driver includes a 5 mm (0.2 in.) spacer for installation.]

● Easy-to-Install Heat Sink Shape



Horizontal Installation



Vertical Installation

Product Line of Motors

□42 mm (□1.65 in.): indicates a motor frame size of 42 mm (1.65 in.).

Type	Features	□28 mm (□1.10 in.)	□35 mm (□1.38 in.)	□42 mm (□1.65 in.)	□50 mm (□1.97 in.)	□56.4/60 mm (□2.22/2.36 in.)	Driver
High-Resolution Type*	A high-resolution type offers higher positioning accuracy with the basic step angle set to 0.9°/step, which is just half the basic step angle of the standard type motor.						
High-Torque Type*	A high-torque motor has higher torque of approx. 1.5 times compared with the conventional standard type motor.						
Standard Type*	The basic products offering a good balance of torque and low vibration/noise characteristics.						
SH Geared Type*	These geared types are effective for inertia reduction, increasing torque, higher resolution and suppressing vibration. Six gear ratios are available.						

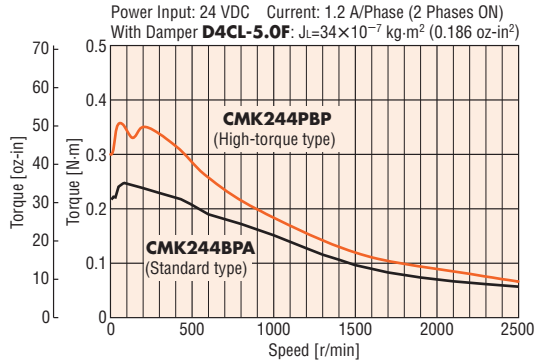
*Motor with an encoder is also available. (Excluding a frame size 28 mm (1.10 in.).)

◇ High-Torque Type

● High-Torque

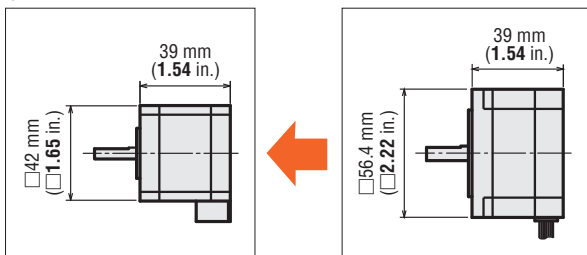
The high-torque type adopts new technology and design. The motor produces approximately 50% higher torque than a conventional stepper motor of the same size.

Comparison of Speed – Torque Characteristics



● Compact Size

Providing torque equivalent to a motor of the next larger frame size, the high-torque type allows for a reduction in the size of the equipment.



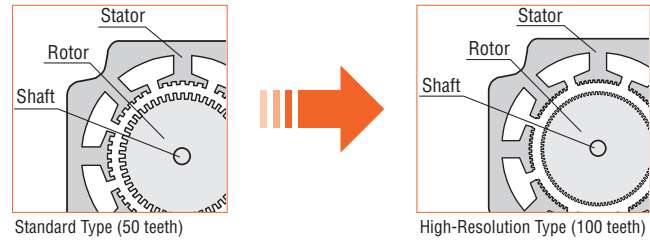
□42 mm (□1.65 in.): indicates a motor frame size of 42 mm (1.65 in.).

High-Torque Type	Type	Standard Type
CMK244PAP	Product Name	CMK264AP
0.39 N·m (55 oz·in)	Maximum Holding Torque	0.36 N·m (51 oz·in)

The high-torque type is connected using a connector – a connection method everyone is familiar with.

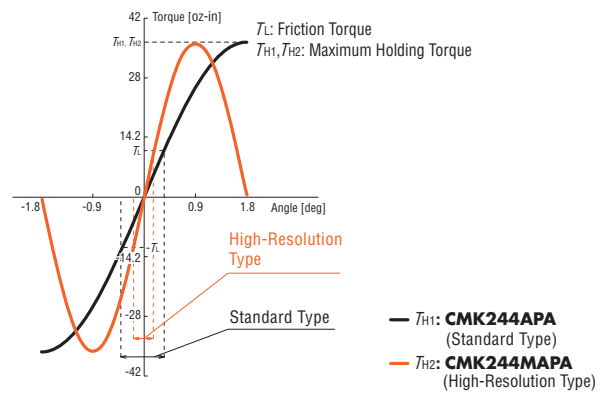
◇ High-Resolution Type

The basic step angle is 0.9°, which is half the step angle of the standard type. 400 steps per rotation is possible. This motor achieves high resolution, low vibration and improved stopping accuracy.



The small basic step angle allows the torque to increase sharply while minimizing the negative effect of friction load.

Comparison of Angle – Torque Characteristics



● Encoder Option Available

200 or 400 pulse/rev, 2 or 3 channel, TTL.
Motor rotations can be detected by taking in encoder output signals into a programmable controller (not supplied).

Overview, Product Series

AC Input Motor & Driver

0.36°/Geared **Q_{STEP} AR**

0.36°/Geared **Q_{STEP} Absolute AZ**

0.72°/Geared **RKII**

DC Input Motor & Driver

0.36°/Geared **Q_{STEP} AR**

0.36°/Geared **Q_{STEP} Absolute AZ**

0.72°/0.36°/Geared **CRK**

1.8°/Geared **RBK**

1.8°/0.9°/Geared **CMK**

0.72° All-in-One **PKA**

Motor Only

1.8°/0.9° **PKP/PK**

Geared **PKP**

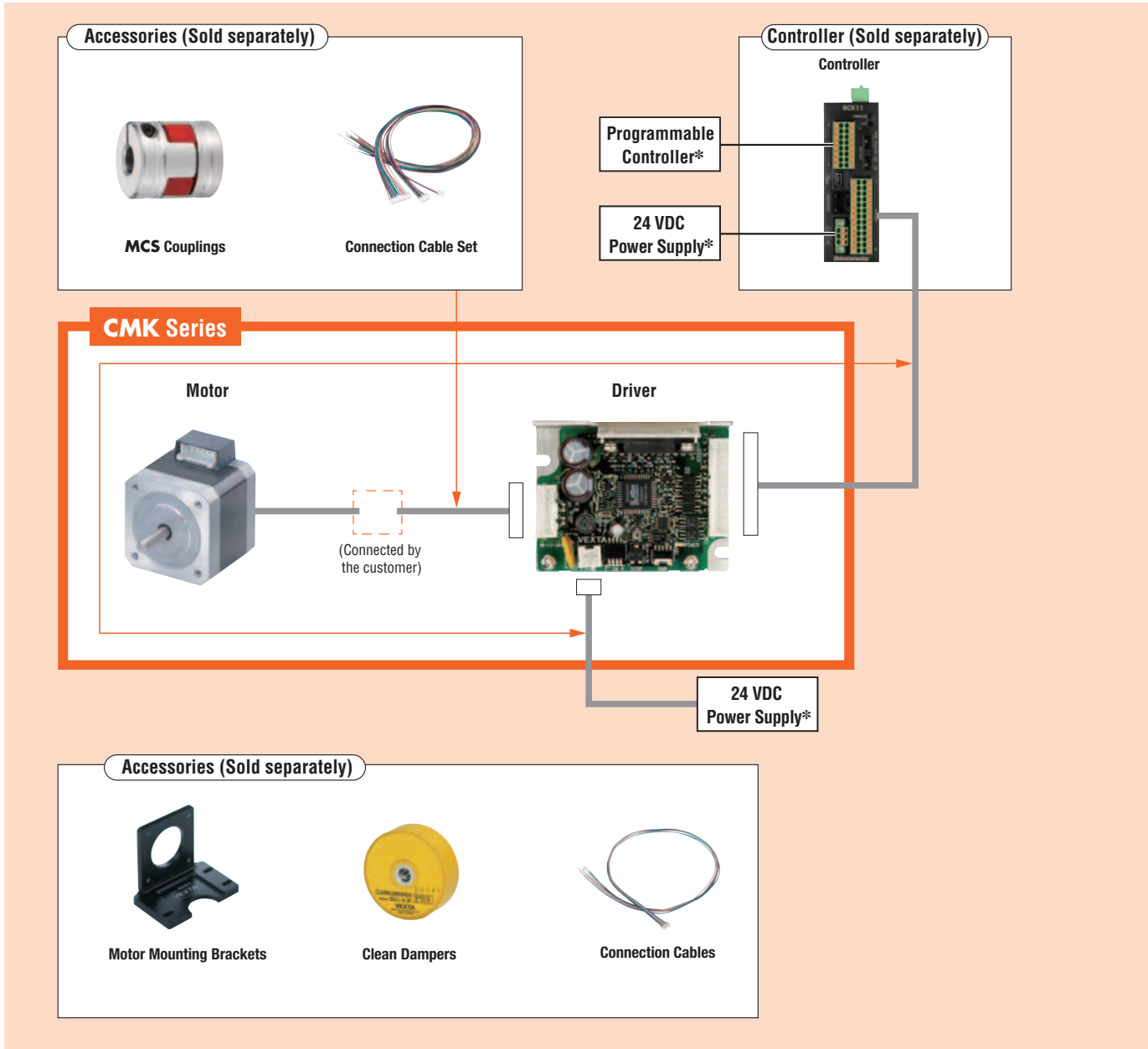
0.72°/0.36° **PKP**

Accessories

System Configuration

An example of a system configuration with the **SCX11** controller.

* Not supplied



● The system configuration shown above is an example. Other combinations are also available.

Product Number

- High-Resolution Type, High-Torque Type, Standard Type

CMK 2 4 3 M A P A
 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧

- High-Resolution Type, High-Torque Type, Standard Type with Encoder

CMK 2 4 3 M A P A - R 1 5
 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪

- SH Geared Type

CMK 2 6 4 A P A - SG 10
 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

- SH Geared Type with Encoder

CMK 2 4 3 P A R 1 5 S 10
 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪

①	Series Name	CMK: CMK Series
②	2-Phase	
③	Motor Frame Size	2: 28 mm (1.10 in.) 3: 35 mm (1.38 in.) 4: 42 mm (1.65 in.) 5: 50 mm (1.97 in.) 6: 56.4 mm (2.22 in.)
④	Motor Case Length	
⑤	Motor Type	P: High-Torque Type M: High-Resolution Type Blank: Standard Type
⑥	Configuration	A: Single Shaft B: Double Shaft
⑦	Signal I/O Mode of Driver	P: Photocoupler
⑧	U.S.A. Version	

①	Series Name	CMK: CMK Series
②	2-Phase	
③	Motor Frame Size	2: 28 mm (1.10 in.) 3: 35 mm (1.38 in.) 4: 42 mm (1.65 in.) 5: 50 mm (1.97 in.) 6: 56.4 mm (2.22 in.)
④	Motor Case Length	
⑤	Motor Type	P: High-Torque Type M: High-Resolution Type Blank: Standard Type
⑥	Configuration	A: Single Shaft
⑦	Signal I/O Mode of Driver	P: Photocoupler
⑧	U.S.A. Version	
⑨	Encoder Version	
⑩	Encoder Output	1: 2-Channel A, B 2: 3-Channel A, B, I
⑪	Encoder Resolution	5: 200P/R 6: 400P/R

①	Series Name	CMK: CMK Series
②	2-Phase	
③	Motor Frame Size	2: 28 mm (1.10 in.) 4: 42 mm (1.65 in.) 6: 60 mm (2.36 in.)
④	Motor Case Length	
⑤	Configuration	A: Single Shaft B: Double Shaft
⑥	Signal I/O Mode of Driver	P: Photocoupler
⑦	U.S.A. Version	
⑧	Gearhead Type	SG: SH Geared Type
⑨	Gear Ratio	

①	Series Name	CMK: CMK Series
②	2-Phase	
③	Motor Frame Size	2: 28 mm (1.10 in.) 4: 42 mm (1.65 in.) 6: 60 mm (2.36 in.)
④	Motor Case Length	
⑤	Signal I/O Mode of Driver	P: Photocoupler
⑥	U.S.A. Version	
⑦	Encoder Version	
⑧	Encoder Output	1: 2-Channel A, B 2: 3-Channel A, B, I
⑨	Encoder Resolution	5: 200P/R 6: 400P/R
⑩	Gearhead Type	S: SH Geared Type
⑪	Gear Ratio	

Overview, Product Series

AC Input Motor & Driver

0.36°/Geared **Q_{STEP} AR**

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0.72°/Geared **RKII**

DC Input Motor & Driver

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0.36°/Geared **Q_{STEP} Absolute AZ**

0.72°/0.36°/Geared **CRK**

1.8°/Geared **RBK**

1.8°/0.9°/Geared **CMK**

0.72° All-in-One **PKA**

Motor Only

1.8°/0.9° **PKP/PK**

Geared **PKP**

0.72°/0.36° **PKP**

Accessories

Product Line

● High-Resolution Type (0.9°)

Product Name (Single shaft)	List Price	Product Name (Double shaft)	List Price
CMK243MAPA	\$243.00	CMK243MBPA	\$245.00
CMK244MAPA	\$244.00	CMK244MBPA	\$246.00
CMK245MAPA	\$252.00	CMK245MBPA	\$255.00
CMK264MAP	\$257.00	CMK264MBP	\$260.00
CMK266MAP	\$263.00	CMK266MBP	\$266.00
CMK268MAP	\$283.00	CMK268MBP	\$286.00

● High-Torque Type (1.8°)

Product Name (Single shaft)	List Price	Product Name (Double shaft)	List Price
CMK223PAP	\$243.00	CMK223PBP	\$245.00
CMK224PAP	\$248.00	CMK224PBP	\$250.00
CMK225PAP	\$253.00	CMK225PBP	\$255.00
CMK233PAP	\$241.00	CMK233PBP	\$243.00
CMK235PAP	\$250.00	CMK235PBP	\$252.00
CMK244PAP	\$244.00	CMK244PBP	\$246.00
CMK246PAP	\$255.00	CMK246PBP	\$257.00
CMK264PAPA	\$257.00	CMK264PBPA	\$260.00
CMK266PAPA	\$263.00	CMK266PBPA	\$266.00
CMK268PAPA	\$283.00	CMK268PBPA	\$286.00

● Standard Type (1.8°)

Product Name (Single shaft)	List Price	Product Name (Double shaft)	List Price
CMK243APA	\$243.00	CMK243BPA	\$245.00
CMK244APA	\$244.00	CMK244BPA	\$246.00
CMK245APA	\$252.00	CMK245BPA	\$255.00
CMK256AP	\$262.00	CMK256BP	\$265.00
CMK258AP	\$271.00	CMK258BP	\$273.00
CMK264AP	\$257.00	CMK264BP	\$260.00
CMK266AP	\$263.00	CMK266BP	\$266.00
CMK268AP	\$283.00	CMK268BP	\$286.00

● High-Resolution Type with Encoder (0.9°)

Product Name	List Price	Product Name	List Price
CMK243MAPA-R15	\$307.00	CMK243MAPA-R16	\$307.00
CMK243MAPA-R25	\$317.00	CMK243MAPA-R26	\$317.00
CMK244MAPA-R15	\$308.00	CMK244MAPA-R16	\$308.00
CMK244MAPA-R25	\$318.00	CMK244MAPA-R26	\$318.00
CMK245MAPA-R15	\$317.00	CMK245MAPA-R16	\$317.00
CMK245MAPA-R25	\$327.00	CMK245MAPA-R26	\$327.00
CMK264MAP-R15	\$322.00	CMK264MAP-R16	\$322.00
CMK264MAP-R25	\$332.00	CMK264MAP-R26	\$332.00
CMK266MAP-R15	\$328.00	CMK266MAP-R16	\$328.00
CMK266MAP-R25	\$338.00	CMK266MAP-R26	\$338.00
CMK268MAP-R15	\$347.00	CMK268MAP-R16	\$347.00
CMK268MAP-R25	\$357.00	CMK268MAP-R26	\$357.00

● High-Torque Type with Encoder (1.8°)

Product Name	List Price	Product Name	List Price
CMK233PAP-R15	\$305.00	CMK233PAP-R16	\$305.00
CMK233PAP-R25	\$315.00	CMK233PAP-R26	\$315.00
CMK235PAP-R15	\$314.00	CMK235PAP-R16	\$314.00
CMK235PAP-R25	\$324.00	CMK235PAP-R26	\$324.00
CMK244PAP-R15	\$308.00	CMK244PAP-R16	\$308.00
CMK244PAP-R25	\$318.00	CMK244PAP-R26	\$318.00
CMK246PAP-R15	\$319.00	CMK246PAP-R16	\$319.00
CMK246PAP-R25	\$329.00	CMK246PAP-R26	\$329.00
CMK264PAPA-R15	\$322.00	CMK264PAPA-R16	\$322.00
CMK264PAPA-R25	\$332.00	CMK264PAPA-R26	\$332.00
CMK266PAPA-R15	\$328.00	CMK266PAPA-R16	\$328.00
CMK266PAPA-R25	\$338.00	CMK266PAPA-R26	\$338.00
CMK268PAPA-R15	\$348.00	CMK268PAPA-R16	\$348.00
CMK268PAPA-R25	\$358.00	CMK268PAPA-R26	\$358.00

● Standard Type with Encoder (1.8°)

Product Name	List Price	Product Name	List Price
CMK243APA-R15	\$307.00	CMK243APA-R16	\$307.00
CMK243APA-R25	\$317.00	CMK243APA-R26	\$317.00
CMK244APA-R15	\$308.00	CMK244APA-R16	\$308.00
CMK244APA-R25	\$318.00	CMK244APA-R26	\$318.00
CMK245APA-R15	\$317.00	CMK245APA-R16	\$317.00
CMK245APA-R25	\$327.00	CMK245APA-R26	\$327.00
CMK256AP-R15	\$327.00	CMK256AP-R16	\$327.00
CMK256AP-R25	\$337.00	CMK256AP-R26	\$337.00
CMK258AP-R15	\$335.00	CMK258AP-R16	\$335.00
CMK258AP-R25	\$345.00	CMK258AP-R26	\$345.00
CMK264AP-R15	\$322.00	CMK264AP-R16	\$322.00
CMK264AP-R25	\$332.00	CMK264AP-R26	\$332.00
CMK266AP-R15	\$328.00	CMK266AP-R16	\$328.00
CMK266AP-R25	\$338.00	CMK266AP-R26	\$338.00
CMK268AP-R15	\$348.00	CMK268AP-R16	\$348.00
CMK268AP-R25	\$358.00	CMK268AP-R26	\$358.00

The following items are included with each product.
Motor, Driver, Driver Connector, Connection Cable*, Operating Manual
*Only for High-Torque Type

● **SH Geared Type**

Product Name (Single shaft)	List Price	Product Name (Double shaft)	List Price
CMK223AP-SG7.2	\$352.00	CMK223BP-SG7.2	\$354.00
CMK223AP-SG9	\$352.00	CMK223BP-SG9	\$354.00
CMK223AP-SG10	\$352.00	CMK223BP-SG10	\$354.00
CMK223AP-SG18	\$366.00	CMK223BP-SG18	\$368.00
CMK223AP-SG36	\$366.00	CMK223BP-SG36	\$368.00
CMK243APA-SG3.6	\$341.00	CMK243BPA-SG3.6	\$343.00
CMK243APA-SG7.2	\$341.00	CMK243BPA-SG7.2	\$343.00
CMK243APA-SG9	\$341.00	CMK243BPA-SG9	\$343.00
CMK243APA-SG10	\$341.00	CMK243BPA-SG10	\$343.00
CMK243APA-SG18	\$361.00	CMK243BPA-SG18	\$363.00
CMK243APA-SG36	\$361.00	CMK243BPA-SG36	\$363.00
CMK264APA-SG3.6	\$344.00	CMK264BPA-SG3.6	\$347.00
CMK264APA-SG7.2	\$344.00	CMK264BPA-SG7.2	\$347.00
CMK264APA-SG9	\$344.00	CMK264BPA-SG9	\$347.00
CMK264APA-SG10	\$344.00	CMK264BPA-SG10	\$347.00
CMK264APA-SG18	\$353.00	CMK264BPA-SG18	\$356.00
CMK264APA-SG36	\$353.00	CMK264BPA-SG36	\$356.00

The following items are included with each product.

Motor, Driver, Driver Connector, Connection Cable*, Installation Screws for Motor, Operating Manual
*Only for connector-coupled motor

● **SH Geared Type with Encoder**

Product Name	List Price	Product Name	List Price
CMK243PAR15S3.6	\$405.00	CMK243PAR16S3.6	\$405.00
CMK243PAR25S3.6	\$415.00	CMK243PAR26S3.6	\$415.00
CMK243PAR15S7.2	\$405.00	CMK243PAR16S7.2	\$405.00
CMK243PAR25S7.2	\$415.00	CMK243PAR26S7.2	\$415.00
CMK243PAR15S9	\$405.00	CMK243PAR16S9	\$405.00
CMK243PAR25S9	\$415.00	CMK243PAR26S9	\$415.00
CMK243PAR15S10	\$405.00	CMK243PAR16S10	\$405.00
CMK243PAR25S10	\$415.00	CMK243PAR26S10	\$415.00
CMK243PAR15S18	\$425.00	CMK243PAR16S18	\$425.00
CMK243PAR25S18	\$435.00	CMK243PAR26S18	\$435.00
CMK243PAR15S36	\$425.00	CMK243PAR16S36	\$425.00
CMK243PAR25S36	\$435.00	CMK243PAR26S36	\$435.00
CMK264PAR15S3.6	\$409.00	CMK264PAR16S3.6	\$409.00
CMK264PAR25S3.6	\$419.00	CMK264PAR26S3.6	\$419.00
CMK264PAR15S7.2	\$409.00	CMK264PAR16S7.2	\$409.00
CMK264PAR25S7.2	\$419.00	CMK264PAR26S7.2	\$419.00
CMK264PAR15S9	\$409.00	CMK264PAR16S9	\$409.00
CMK264PAR25S9	\$419.00	CMK264PAR26S9	\$419.00
CMK264PAR15S10	\$409.00	CMK264PAR16S10	\$409.00
CMK264PAR25S10	\$419.00	CMK264PAR26S10	\$419.00
CMK264PAR15S18	\$418.00	CMK264PAR16S18	\$418.00
CMK264PAR25S18	\$428.00	CMK264PAR26S18	\$428.00
CMK264PAR15S36	\$418.00	CMK264PAR16S36	\$418.00
CMK264PAR25S36	\$428.00	CMK264PAR26S36	\$428.00

Overview,
Product
Series

AC Input
Motor &
Driver

0.36°/Geared
*Q*STEP
AR

0.36°/Geared
*Q*STEP
Absolute
AZ

0.72°/Geared
RKII

DC Input
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AR

0.36°/Geared
*Q*STEP
Absolute
AZ

0.72°/0.36°
/Geared
CRK

1.8°/Geared
RBK

1.8°/0.9°
/Geared
CMK

0.72°
All-in-One
PKA

Motor Only

1.8°/0.9°
PKP/PK

Geared
PKP

0.72°/0.36°
PKP

Accessories



For details (specifications, characteristics, dimensions and others) on these products please refer to either to our website, contact technical support or your nearest Oriental Motor sales office.

www.orientalmotor.com/catalog